

What is claimed:

1. A curable resin composition, containing essentially no volatile organic components, comprising:

at least one enzyme degradable, vinyl dioxolane end-capped oligomer, wherein the vinyl dioxolane end-capped oligomer comprises at least one enzyme degradable segment, and at least one catalyst to initiate polymerization of the oligomer to form an enzyme degradable polymer.

2. The curable resin composition of claim 1, wherein the enzyme degradable oligomer comprises a polyester, polyhydroxy butrate valerate (PHVB), polylactic acid, cellulose, cellulose derivative, nylon, acrylate, polyurethane, and copolymers and blends thereof.

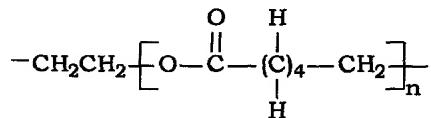
3. The curable resin composition of claim 1, wherein the enzyme degradable, vinyl dioxolane end-capped oligomer comprises at least two enzyme degradable segments.

4. The curable resin composition of claim 3, wherein each of the enzyme degradable segments are identical.

5. The curable resin composition of claim 2 wherein the enzyme degradable, vinyl dioxolane end-capped oligomer comprises a polyester.

6. The curable resin composition of claim 5 wherein the polyester comprises a polycaprolactone.

7. The curable resin composition of claim 6, wherein the polycaprolactone has the formula:



wherein each R is hydrogen or α -caprolactone being unsubstituted or substituted and n is from 1 to about 100.

8. The curable resin composition of claim 7 wherein n is from 1 to about 15.

9. The curable resin composition of claim 7, wherein the polycaprolactone has a molecular weight up to about 2500 g/mole

10. The curable resin composition of claim 1, wherein the vinyl dioxolane end-caps comprise substituted or unsubstituted vinyl hydroxy alkyl dioxolanes and vinyl carboxy alkyl dioxolanes, having from 2 to about 10 carbons.

11. The curable resin composition of claim 10, wherein the vinyl-dioxolane end-caps are derived from 2-vinyl-4-hydroxybutyl-1,3-dioxolane (HBVD) or 2-vinyl-4-hydroxymethyl-1,3-dioxolane (HMVD).

12. The curable resin composition of claim 1, wherein the coating composition is sprayable.

13. The curable resin composition of claim 1, further comprising at least one reactive diluent.

14. The curable resin composition of claim 13, wherein the reactive diluent is present up to about 50% by weight of the composition.

15. The curable resin composition of claim 13, wherein the reactive diluent is present up to about 25% by weight of the composition.

16. The curable resin composition of claim 13, wherein the reactive diluent is present up to about 10% by weight of the composition.

17. The curable resin composition of claim 13, wherein the reactive diluent has a viscosity from about 10 to about 200 mPa•s at about 23° C.

18. The curable resin composition of claim 13, wherein the reactive diluent comprises an enzyme degradable reactive diluent.

19. The curable resin composition of claim 13, wherein the reactive diluent comprises HMVD, diethylene glycol diacrylate (DGD), trimethylolpropane triacrylate (TMPTA), or a blend thereof.

20. The curable resin composition of claim 1, wherein the enzyme degradable, vinyl dioxolane end-capped oligomer comprises from about 65 to about 90 weight percent of the enzyme degradable polymer.

21. The curable resin composition of claim 1, wherein the catalyst is an air cure, a thermal cure or a UV cure catalyst.

22. The curable resin composition of claim 21, wherein the air or thermal cure catalyst is a peroxide, a cobalt composition or combinations thereof.

23. The curable resin composition of claim 22, wherein the thermal cure catalyst is a peroxide combined with at least one transition metal soap.

24. The curable resin composition of claim 23, wherein the thermal cure catalyst comprises tert-butyl peroxy benzoate (TBPB), Co, Al, and DMA.

25. The curable resin composition of claim 21, wherein the UV cure catalyst is a photoinitiator.

26. The curable resin composition of claim 25, wherein the photoinitiator is an alpha hydroxyketone type photoinitiator.

27. A coating comprising the curable resin composition of claim 1.

28. A stripper composition for the curable resin of claim 27, comprising an enzyme which is capable of degrading the enzyme degradable polymer.

29. The stripper composition of claim 28, wherein the at least one enzyme degradable segment comprises at least one polycaprolactone and the enzyme comprises a lipase.

30. The stripper composition of claim 29, wherein the lipase is immobilized.

31. The stripper composition of claim 29, wherein the lipase is lipase-B.

32. A method of providing a enzyme degradable polymer coating, the method comprising applying a curable resin composition containing essentially no volatile organic components and allowing the curable resin composition to cure, wherein the curable resin comprises:

at least one vinyl dioxolane end-capped oligomer, wherein the vinyl dioxolane end-capped oligomer comprises at least one enzyme degradable segment, and at least one catalyst to initiate polymerization of the oligomer to form a enzyme degradable polymer.

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